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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/568,981	02/21/2006	Linfeng Chen	63399A	8846

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UNION CARBIDE CHEMICALS AND PLASTICS TECHNOLOGY
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EXAMINER

CHOI, LING SIU

ART UNIT	PAPER NUMBER
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1713

MAIL DATE	DELIVERY MODE
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08/23/2007

PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/568,981	Applicant(s) CHEN, LINFENG	
	Examiner Ling-Siu Choi	Art Unit 1713	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-13 is/are pending in the application..
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 1-13 is/are rejected.
- 7) ☐ Claim(s) ____ is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on ____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
 Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
 Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. ____.
3. ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|--|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. ____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date <u>2/21/2006</u> . | 6) <input type="checkbox"/> Other: ____ |

DETAILED ACTION

1. Claims 1-13 are now pending, wherein claims 1-6 are drawn to a catalyst for propylene polymerization and claims 7-13 are drawn to a polymerization process. And claims 1 and 7 are independent claims.

Claim Objections

2. Claims 1-13 are objected to because of the following informalities: (a) claim 1, line 5; claim 7, line 7, "selectivity control agents" is suggested to be changed to --selectivity control agents (SCA)-- and (b) claims 8-13, line 1, "the method" is suggested to be changed to --The process--.

Appropriate correction is required.

Claim Analysis

3. Summary of claim 1:

A catalyst composition for the polymerization of propylene or mixtures of propylene and one or more copolymerizable comonomers, comprising	
A. one or more Ziegler-Natta procatalyst	one or more transition metal compounds
	one or more monoesters of aromatic carboxylic acid internal electron donors
B. aluminum containing cocatalysts	
C. a mixture of two or more different	<u>from 98.0 to 99.9 mol %</u> of one or more

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selectivity control agents (SCA)	esters of one or more aromatic monocarboxylic acids or substituted derivatives thereof and
	<u>from 2.0 to 0.1 mol %</u> of one or more alkoxysilane compounds

Summary of claim 7:

A polymerization process comprising contacting propylene or a mixture of propylene and one or more copolymerizable comonomers under polymerization conditions at a temperature from 45 to 100 °C with	
a catalyst composition	one or more Ziegler-Natta procatalyst compositions: one or more transition metal compounds and one or more internal electron donors selected from the group consisting of esters of aromatic monocarboxylic acids
	one or more aluminum containing cocatalysts; and
	a mixture of two or more different selectivity control agents, comprising <u>from 98.0 to 99.9 mol%</u> of one or more esters of one or more aromatic monocarboxylic acids or substituted derivatives thereof, and <u>from 2.0 to 0.1 mol %</u> of one or more alkoxysilane compounds

Claim Rejections - 35 USC § 102

4. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

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A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

5. Claims 1-13 are rejected under 35 U.S.C. 102(b) as being anticipated by Rebhan (US 5,432,244) [EP 0 490 451 A2].

Rebhan discloses a process for the polymerization of propylene or a mixture comprising propylene and one or more alpha-olefins and, optionally, one or more diolefins comprising contacting the propylene or the mixture of olefins in at least one reaction zone, under polymerization conditions with a catalyst system comprising (i) a solid catalyst precursor which includes magnesium, titanium, a halogen, and a **mono- or polycarboxylic acid ester**: $\text{TiCl}_4 \bullet 12\text{MgCl}_2 \bullet 2\text{C}_6\text{H}_5 \text{COOC}_6\text{H}_5$; (ii) a hydrocarbylaluminum cocatalyst; and (iii) **a mixture of selectivity control agents comprising a mono- or polycarboxylic acid ester and a silicon compound containing at least one silicon-oxygen-carbon linkage** with the proviso that the molar ratio of the ester to silicon compound in the mixture of selectivity control agents is in the range of about 1.5:1 to **about 50:1**; the cocatalyst is a trialkyl aluminum; the mixture of selectivity control agents comprises **para-ethoxyethyl benzoate** and a dialkyldialkoxysilane or an alkyltrialkoxysilane, which can be cyclohexylmethyl dimethoxysilane (abstract; col. 4, lines 54-55; claims 1, 4, and 9). Thus, the present claims are anticipated by the disclosure of Rebhan.

Conclusion


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6. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure: Tanaka (JP 61-203105).

Tanaka discloses a catalyst obtained by mixing a complex (A) of an organomagnesium compound with a Ti compound, with a trialkylaluminum (B) and a stereoregularity improver (C) comprising 1 part by weight of aromatic carboxylic ester and 10 -1 parts by weight of Si-O bond-containing organosilicon compound (abstract). However, Tanaka does not teach or fairly suggest a catalyst comprising the claimed amounts of the combination of electron donors.

7. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Ling-Siu Choi whose telephone number is 571-272-1098.

If attempt to reach the examiner by telephone are unsuccessful, the examiner's supervisor, David Wu, can be reached on 571-272-1114.



LING-SUI CHOI
PRIMARY EXAMINER

August 15, 2007